

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Previously Presented) The process defined in claim 22, wherein Step (iii) comprises altering the relative linear distance between the radiation source and the radiation sensor.

32. (Cancelled)

33. (Previously Presented) The process defined in claim 22, wherein Step (iii) comprises altering the first thickness of the radiation field in a step-wise manner.

34. (Previously Presented) The process defined in claim 22, wherein Step (iii) comprises altering the first thickness of the radiation field in a continuous manner.

35. (Currently Amended) An optical radiation sensor device for detecting ~~radiation~~ fluid transmittance in a radiation field generated in a fluid flow of interest, the device comprising:

a radiation source submersible in the fluid flow of interest;

a submersible first radiation sensor element positioned in the fluid flow of interest at a first distance from the radiation source, said first radiation sensor element being configured to measure a ~~a~~ first intensity of the radiation field in the fluid flow;

a submersible second radiation sensor element positioned in the fluid flow of interest at a second distance from the radiation source, said second radiation sensor element being configured to measure a ~~a~~ second intensity of the radiation field in the fluid flow, said second radiation sensor element being disposed substantially parallel to said first radiation sensor element with respect to a direction of the fluid flow;

structure to use the first intensity and the second intensity to calculate fluid transmittance in the radiation field;

wherein: (i) the first distance is different from the second distance, (ii) the first radiation sensor element is capable of detecting and responding to incident radiation from said radiation source at the first distance, and (iii) the second radiation sensor element is capable of detecting and responding to incident radiation from said radiation source at the second distance.